

**RoHS Compliant
Pb - Lead Free**

Ltr	Revisions	Date	Appr

Electrical Specifications:

Frequency Range		8.000 to 133.000	MHz
Mode of Oscillation	Fundamental	8.000 to 54.000	MHZ
	Third Overtone	40.000 to 133.000	
Frequency Tolerance at 25°C	Standard	±30	PPM Max
	Optional	±25	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max
	Optional	±30	
		±25	
		±20	
		±15	
Operating Temperature Range	Standard	-10 to +70	° C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
Aging		±3	PPM Max/Year
Load Capacitance		6 to 32 and Series Resonance	pF
Shunt Capacitance		7.0	
Equivalent Series Resistance (ESR)		See ESR Table	Ohm
Drive Level		100	uW Typ
Insulation Resistance		500 at 100 Vdc ± 15 Vdc	M Ohm

Frequency Range and ESR Values:

Frequency Range in MHz	ESR Ohm Max	Mode of Operation	Frequency Range in MHz	ESR Ohm Max	Mode of Operation
8.000 to 9.749	70	Fundamental	40.000 to 79.999	100	3rd Overtone
9.750 to 9.999	60	Fundamental	80.000 to 99.999	80	3rd Overtone
10.000 to 11.999	45	Fundamental	100.000 to 133.000	60	3rd Overtone
12.000 to 15.999	35	Fundamental			
16.000 to 19.999	30	Fundamental			
20.000 to 49.999	25	Fundamental			
50.000 to 54.000	20	Fundamental			



Accurate Kinetic Energy

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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

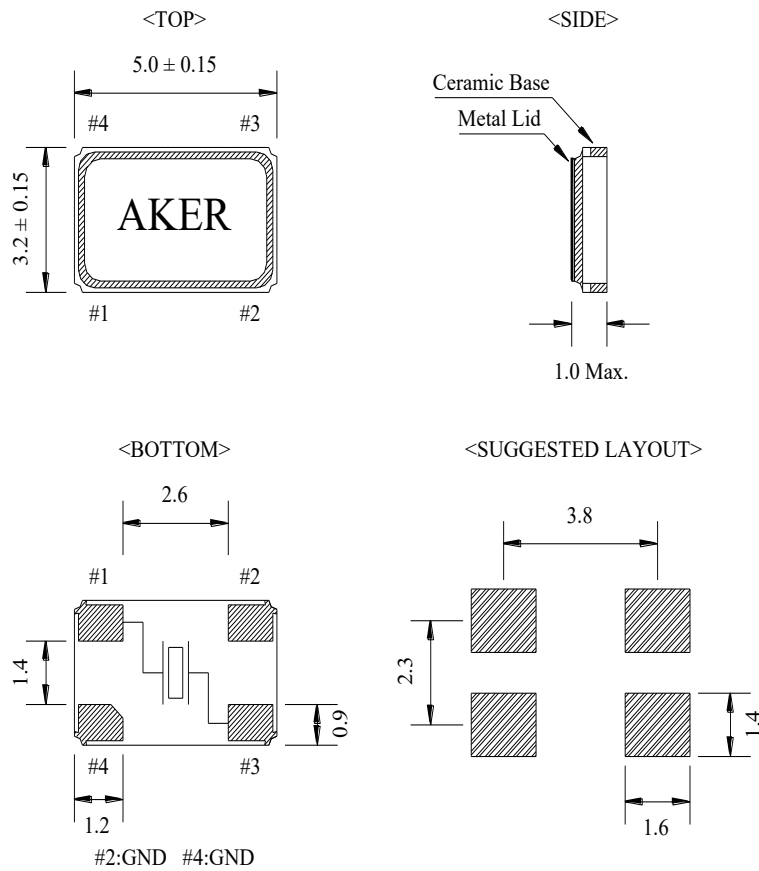
Page: 1/4 Date: Dec 1, 2018

Specification Title:

**Microprocessor Crystal Unit
5.0 x 3.2 millimeter Surface Mount
General Product Specification**

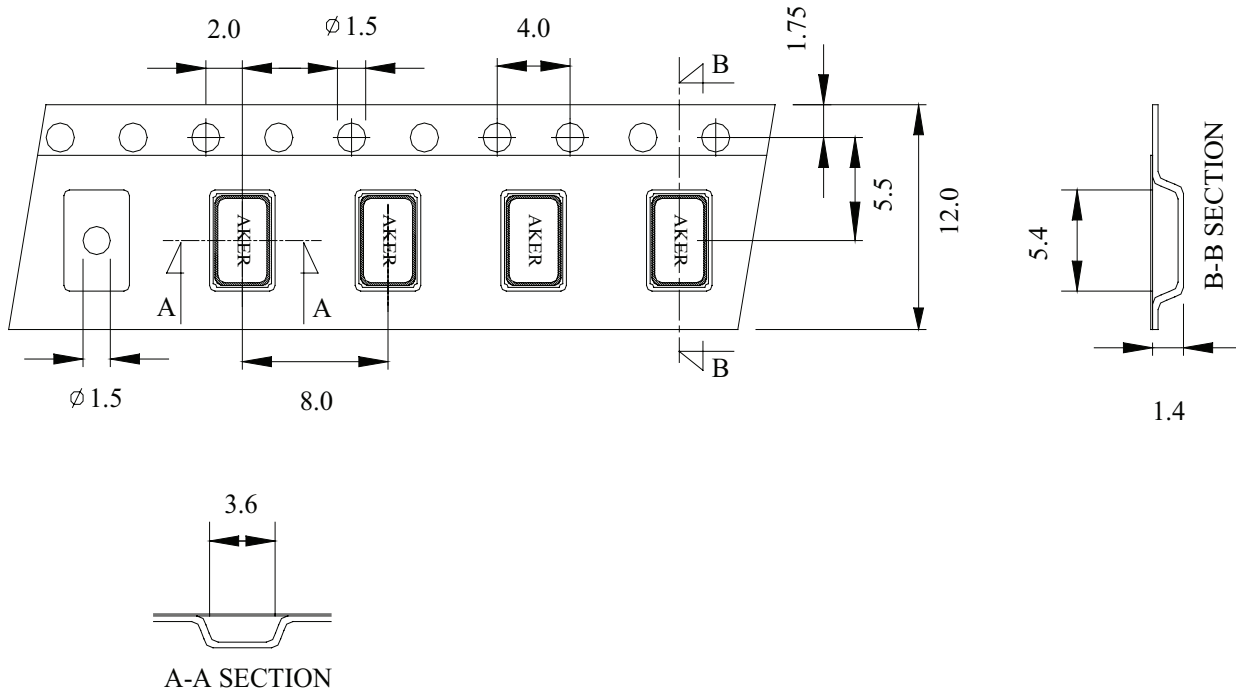
Part Number: **C5S Series**

Mechanical Outline:



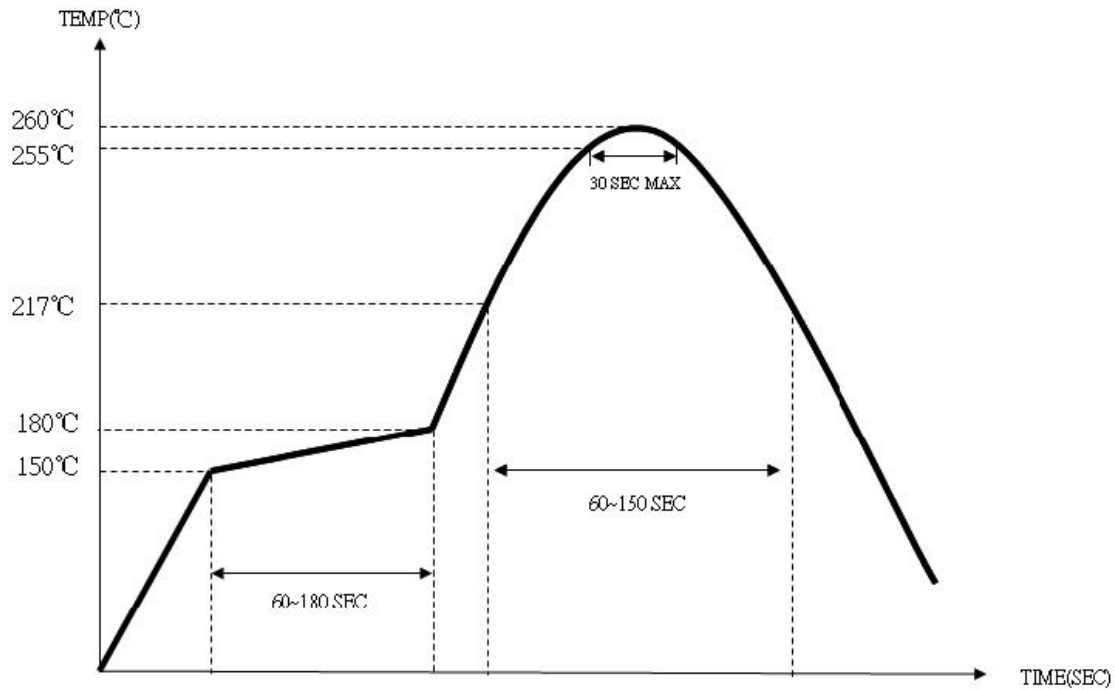
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series		C	Parameter
Package		5S	5.0 x 3.2 mm
		-	
Frequency		8.000 to 133.000	MHz
		-	
Load Capacitance		6	6 pF
		10	10 pF
		12	12 pF
		16	16 pF
		18	18 pF
		20	20 pF
		32	32 pF
		S	Series
		-	
Frequency Tolerance	Standard	30	±30 PPM
	Option	20	±20 PPM
		15	±15 PPM
		10	± 10 PPM
Frequency Stability	Standard	50	±50 PPM
	Option	30	±30 PPM
		20	±20 PPM
		15	±15 PPM
		10	±10 PPM*
		-	
Mode of Oscillation		See Notes	Fundamental
		3	Third Overtone
		-	
Temperature Range	Standard	See Notes	-10 to +70 °C
	Option	X	-40 to +85 °C
		-	
Packaging		M	250pcs Reel
		R	1000pcs Reel

Part Number Example:

C5S-40.000-3050-X-R

C5S: 5.0 x 3.2 mm SMD Seam Sealed Package

40.000 MHz Nominal Frequency

18 pF Load Capacitance

3050: ±30 PPM Frequency Tolerance and ±50 PPM Frequency Stability

X: -40 to +85° C Extended Temperature Range

R: Tape and Reel Packaging

Notes:

- 1- Fundamental mode does not need to be included in Part Number description.
* ±10 PPM Temperature Stability is only available from -30 to +85° C.
- 2- Other Load Capacitances are available other than those listed in Part Number table above.
- 3- Product is shipped in Tape and Reel configuration.
- 4- Quantities less than 250pcs are shipped in tape
- 5- Specification subject to change without notice

Page: 4/4	Date: May 1, 2013	P/N: C5S Series	
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